REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-16, 24, 25, 27, and 30-32 are pending in this case.

In the outstanding Official Action, Claim 30 was rejected under 35 U.S.C. §103(a) as unpatentable over Klosterman (U.S. Patent No. 6,453,471) in view of Marshall et al. (U.S. Patent No. 6,419,137, hereinafter "Marshall"), Arazi et al. (U.S. Patent No. 5,966,120, hereinafter "Arazi") and Kenner et al. (U.S. Patent No. 6,269,394, hereinafter "Kenner"); Claim 31 was rejected under 35 U.S.C. §103(a) as unpatentable over Klosterman in view of Marshall, Arazi, and Kenner and further in view of Tokunaga et al. (U.S. Patent No. 5,968,132, hereinafter "Tokunaga"); Claims 1, 2, 6, 9-11, 13, 25, and 32 were rejected under 35 U.S.C. §103(a) as unpatentable over Klosterman in view of Marshall and Arazi and further in view of Tokunaga; Claim 3 was rejected under 35 U.S.C. §103(a) as unpatentable over Klosterman in view of Marshall, Arazi, and Tokunaga and further in view of Hölzle et al. (U.S. Patent No. 5,970,249, hereinafter "Hölzle"); Claims 4 and 5 were rejected under 35 U.S.C. §103(a) as unpatentable over Klosterman in view of Marshall, Arazi, and Tokunaga and further in view of Winston (U.S. Patent No. 6,434,653); Claim 7 was rejected under 35 U.S.C. §103(a) as unpatentable over Klosterman in view of Marshall, Arazi, and Tokunaga and further in view of Russo (U.S. Patent No. 5,619,247); Claim 8 was rejected under 35 U.S.C. §103(a) as unpatentable over Klosterman in view of Marshall, Arazi, and Tokunaga and further in view of Kostreski et al. (U.S. Patent No. 5,729,549, hereinafter "Kostreski"); Claims 12 and 24 were rejected under 35 U.S.C. §103(a) as unpatentable over Klosterman in view of Marshall, Arazi, and Tokunaga and further in view of Trovato (U.S. Patent No. 6,701,526); and Claims 14-16 were rejected under 35 U.S.C. §103(a) as unpatentable over

Klosterman in view of Marshall, Arazi, and Tokunaga and further in view of Inoue et al. (U.S. Patent Publication No. 2002/0016963 A1, hereinafter "Inoue").

With regard to the rejection of Claim 30 under 35 U.S.C. §103(a) as unpatentable over Klosterman in view of Marshall, Arazi, and Kenner, that rejection is respectfully traversed.

Claim 30 recites in part:

> a processor configured to periodically extract all of the plurality of sets of the broadcast data service data from a broadcast carousel included in the broadcast signal;
> a memory configured to store all of the current plurality of sets of the broadcast data service data; the broadcast data service data defining a plurality of digital audio/video data sets, the digital audio/video data sets including television clips;
> a display configured to provide a list of a plurality of sets of the digital audio/video data sets;
> a controller responsive to a user initiated selection signal to cause the memory to output a user selected one of the plurality of digital audio/video data sets selected from the list simultaneously with continued receipt of the broadcast digital television data, the selected one of the broadcast data service data plurality of sets having digital audio/video data, the digital audio/video data of the broadcast data service data being configured in the broadcast signal for reception at a rate slower than an audio/video replay rate for the selected set, the selection signal being provided at any time during receipt of the broadcast digital television data and independently of the broadcast digital television data and the controller is responsive at any time during receipt of the broadcast digital television data and independently of the broadcast digital television data to output said selected portion; and
> a broadcast headend configured to update the plurality of digital audio/video data sets with a priority determined from demand for each set;
> a transmitter configured to transmit to the broadcast headend an identity of each user selected set such that the broadcast headend can determine demand for each set, wherein the processor converts the digital audio/video data of the plurality of sets of the broadcast data service data into real time audio/video data having a real time audio/video replay rate.

Klosterman describes a system providing an EPG with video clips of programs on that EPG. According to Klosterman, video previews are broadcast in rotation as part of a

carousel. Upon selection by a user, an individual video preview is obtained from the carousel and provided to the user. It is respectfully submitted that there are two main differences between Claim 30 and the system described by Klosterman. First, Klosterman discloses the ability to extract any one of the plurality of clips at any one time and, hence, over time, eventually extracting the plurality of points. It is respectfully submitted that Klosterman does not disclose anything other than extracting a video preview as and when selected by the user. In particular, it does not disclose the idea of extracting all of a plurality of video previews as a whole, nor doing this periodically. Second, it is respectfully submitted that Klosterman does not "convert" data into real time audio/video data. Klosterman certainly discloses reproduction of audio/video data in real time, but, as the outstanding Office Action appears to acknowledge, it does not disclose transmission of data slower than real time. Hence, it is respectfully submitted there is no conversion of data into real time audio/video data.

With regard to Marshall, the outstanding Office Action asserted that it would be obvious to store locally all of the current plurality of sets of the broadcast data service data. However, it is respectfully submitted that, at the priority date of the present application, it would not have been obvious to store all of the current plurality of sets of the broadcast data service data locally. Local devices in the broadcast world traditionally have not had large amounts of memory space available. At the priority date of August 1999 of the present application, it would have been quite surprising and non-obvious to store locally in a television device a large amount of audio/video data constituting video previews. Besides, in the field of EPG's and providing video previews, it would be quite natural to provide a video of reduced size such that there would be no difficulty in a user extracting the required audio/video data in real time from the carousel.[1] With smaller amounts of data for the audio/video, the carousel can be cycled at an acceptable rate and extraction of individual files

[1]e.g. column 2, lines 1-3 and 62-65 of Klosterman mention providing the preview video in only a portion of the screen.

can be achieved at an acceptable rate such that there is no significant delay in obtaining all of the necessary data as and when required from the carousel.

Further, it is noted that Marshall was filed after the priority date of the present application. However, it is a continuation which goes back to parent US Patent No. 5,523,796. US Patent No. 5,523,796 was actually cited against the Klosterman application. The Marshall technology thus predates the Klosterman technology and thus if it were so obvious to store data, then it seems Klosterman would have mentioned this.

Accordingly, it is respectfully submitted that it would not at all have been obvious to store all of the plurality of sets of broadcast data service data and, in contrast, with the teaching of Klosterman, when preview video is extracted as and when the user requires, there is no need or advantage to storing that data.

Moreover, the only reference in Marshall to storing data appears to be in line 48 of column 1. In lines 48-52 of column 1, it is stated:

> It also receives and stores an input picture image signal containing local program guide data and descriptive data and video clips related to selected ones of the programs identified in the program guide data.

Marshall thus mentions storing an input picture image signal containing video clips, but there is no disclosure of storing all of a current plurality of sets of broadcast data service data. Marshall only mentions storing "video clips related to selected ones of the programs identified in the program guide data". Reading Marshall as a whole, there does not appear to be any significance placed on storing the data. We submit that the skilled reader would understand nothing more from line 48 of column 1 than merely storing temporarily in a cache during normal processing.

Thus, considering the teachings of Klosterman and Marshall together, the skilled person is still taught nothing other than obtaining video previews from a carousel as and when requested by a user. There is certainly no teaching or suggestion of periodically

extracting all of the plurality of sets of the broadcast data service data from a broadcast carousel included in the broadcast signal and then storing all of the current plurality of sets of the broadcast data service data where that broadcast data service data defines a plurality of digital audio/video data sets, the digital audio/video data sets including television clips as recited in Claim 30.

It is respectfully submitted that merely referring to Marshall and noting its reference to storing an input picture image signal and then leaping to the conclusion that it would be obvious to adapt Klosterman to periodically extract and store all video previews requires an unacceptable use of hindsight.

Next, the outstanding Office Action then asserts that based on Arazi it would be obvious to broadcast the additional content at a rate slower than real time and then to convert into real time for display. Arazi describes a receiver that receives a primary video stream and an auxiliary data stream. The receiver inserts selected portions of the auxiliary data stream into selected primary encoded video programs. Arazi has two objects, namely (1) to provide for efficient real-time distribution of one or more variable bit-rate programs and (2) to selectively distribute the auxiliary data which is distributed in non-realtime using any available channel capacity and is stored locally at the selected receivers for realtime presentation. As explained at column 3, line 65 to column 4, line 6 of Arazi, these objects may be achieved by inserting the auxiliary data where fill packets would have otherwise been used, thereby creating a constant bit-rate data stream. Although Arazi does describe that the auxiliary data can be teletext, advertising, or other encoded video,[2] there is no explicit teaching of auxiliary data which is video data which can be selected by the user independently of the primary program video.

[2]Arazi, column 6, lines 17-19.

With a system such as described in Klosterman where a user expects to select a video preview for immediate viewing, it would be unacceptable (and hence quite non-obvious) for the data for that video preview to be transmitted slower than real time, accumulated locally and then replayed in real time, because this would significantly delay the response time of the apparatus. It only becomes possible to broadcast the additional content slower than real time once the realization has been made that the data can be stored locally in advance. As discussed above, even with a combination of Klosterman and Marshall, the skilled person is not taught the idea of periodically extracting all of the plurality of sets of broadcast data service data and storing all of the current plurality of sets of the broadcast data service data. Claim 30 defines that, responsive to a user initiated selection signal, the memory outputs a user selected one of the plurality of digital audio/video data sets. In order to do this when the data has been received slower than real time, the skilled person would have had to have considered storing all of the data locally.

According to Claim 30, the controller is responsive to a user initiated selected signal which can be provided at any time during receipt of the broadcast digital television data and independently of the broadcast digital television data and selects one of the listed plurality of sets of digital audio/video data sets. If the selected one of the plurality of digital audio/video data sets was to be extracted slower than real time and had not previously been stored, then there would be an unacceptable delay to the user. It is respectfully submitted that such an arrangement would not be considered by the skilled person. Receiving the digital audio/video data of the broadcast data service at a rate slower than real time would only be considered by the skilled person if the skilled person had already realized that the digital audio/video data could be stored in advance. As explained above, even with the combination of Klosterman and Marshall, there is no suggestion of periodically extracting all of the

plurality of sets of the broadcast data service data and storing all of the current plurality of sets of the broadcast data service data.

Arazi does mention auxiliary data being distributed in non-real time and, in this respect, also refers to local storage. However, Arazi only describes that selected portions of the auxiliary data are extracted and transferred to the local auxiliary storage. Arazi does ***not*** store ***all*** of the current portions of the broadcast data service. In the case of video data, as explained at column 9, lines 36-39 of Arazi, the extracted auxiliary data remains in the local auxiliary data storage 440 only until they are ready to be combined with a primary encoded video program.

It is important to note that according to Claim 30 the controller is responsive to a user initiated selection signal and is responsive at any time during receipt of the broadcast digital television data and independently of the broadcast digital television data to output the selected portion. Arazi describes the transfer of data from the local auxiliary data storage 440 to the augmentation multiplexer 630 to combine the auxiliary data with the primary data. A read buffer 610 is used to buffer auxiliary data between the local auxiliary data storage 440 and the augmentation multiplexer 630. Hence, Arazi does ***not*** teach a selection signal provided by the end user. The auxiliary read data request signal, as described by Arazi, is an internal signal causing the receiver storage controller 430 to provide more auxiliary data to the read buffer 610.

Thus, Arazi discloses a special case of distributing auxiliary data in non-real time and storing it locally. According to Arazi, when the auxiliary data is video data, the intention, in advance, is for that auxiliary data to be combined with the primary video data. Hence, it can be distributed in advance for this purpose and stored locally in a buffer.

Therefore, it is respectfully submitted that it would require an unallowable use of hindsight to consider periodically extracting and storing all of a set of digital audio/video data

sets for future independent selection by a user and to broaden the teaching of Arazi to use non-real time distribution of auxiliary data (intended for combination with primary video data) so as to consider broadcast of the plurality of digital audio/video data sets slower than real time.

Thus, even in combination, Klosterman, Marshall, and Arazi do not disclose the idea of periodically extracting and storing all of the plurality of sets of the broadcast data service data having digital audio/video data sets including television clips. At the priority date, it would not be obvious to consider periodically extracting and storing all of the data. Without this consideration, the skilled person would not consider transmission slower than real time. The present inventors recognized for the first time the possibility and advantages of periodically extracting and storing all of the plurality of sets of broadcast data service data at a rate slower than real time whereby relatively large size video clips can be provided quickly upon demand to a user, but be provided without consuming large bandwidth. Considering Klosterman, Marshall, and Arazi, the skilled person is taught nothing more than extracting video previews from a carousel upon selection, storing video clips related "to selected ones of the programs identified in the program guide data" and for auxiliary data to be combined with the primary video data, distributing that auxiliary data in non-real time for local storage.

Finally, the outstanding Office Action asserted that based on Kenner it would be obvious to configure the broadcast head end to update the plurality of digital audio/video data sets with a priority determined from demand for each set and to transmit to the broadcast head end an identity of each user selected set such that the broadcast head end can determine demand for each set.

In contrast to Klosterman, Marshall, and Arazi which relate to the provision of additional video data over a broadcast system, Kenner relates merely to a system for distributing video clips. We do not believe that it would be obvious for the skilled person to

consider the teaching of Kenner when working in the field of providing broadcast digital television data as part of a broadcast signal.

According to Kenner, video clips can be stored at local and/or remote locations around a network and retrieved by a user's multimedia terminal. The system of Kenner records how often particular video clips are requested and is able to identify and track the most frequently requested audio/visual clips. In this way, according to Kenner, the location of video clips, for instance which clips are stored locally, can be managed.

In contrast, Claim 30 is concerned with updating the plurality of audio/video data sets with a priority determined from demand for each set. It is not concerned with managing storage location. On the other hand, Kenner does not concern updating digital audio/video data sets. If anything, from Kenner, the skilled person might consider extracting and storing some of the plurality sets of broadcast data service data locally at an end user and varying what data sets are stored locally at the end user according to demand. This would be a teaching away from the invention as defined in Claim 30 to periodically extract and store ***all*** of the plurality of sets of the broadcast data service sets.

Claim 30 recites a system which periodically extracts all of the plurality of sets of the broadcast data service data from a broadcast carousel included in the broadcast signal. The plurality of digital audio/video data sets within that carousel can be updated. The invention recited in Claim 30 defines that this is achieved according to a priority determined from demand for each set, demand being determined by transmitting to the broadcast head end an identity of each user selected set. Kenner provides no suggestion of this, particularly not in a broadcast environment.

Consequently, as the proposed combination does not teach or suggest each and every element as defined in Claim 30, and in fact the references teach away from including such

features, Claim 30 (and Claim 31 dependent therefrom) is patentable over Klosterman in view of Marshall, Arazi, and Kenner.

With regard to the rejection of Claim 1 under 35 U.S.C. §103(a) as unpatentable over Klosterman in view of Marshall, Arazi, and Tokunaga, that rejection is respectfully traversed.

Claim 1 recites in part:

> a processor configured to periodically extract all of the plurality of sets of the broadcast data service data from a broadcast carousel included in the broadcast signal;
>
> a memory configured to store all of the current plurality of sets of the broadcast data service data; the broadcast data service data defining a plurality of digital audio/video data sets, the digital audio/video data sets including television clips, all of the digital television data is in a first data compression format and at least some of the digital audio/visual data sets are in a data compression format different from the first format;
>
> a display configured to provide a list of a plurality of sets of the digital audio/video data sets; and
>
> a controller responsive to a user initiated selection signal to cause the memory to output a user selected one of the plurality of digital audio/video data sets selected from the list simultaneously with continued receipt of the broadcast digital television data, the selected one of the broadcast data service data plurality of sets having digital audio/video data in non-real time, the selection signal being provided at any time during receipt of the broadcast digital television data and independently of the broadcast digital television data and the controller is responsive at any time during receipt of the broadcast digital television data and independently of the broadcast digital television data to output said selected portion;
>
> wherein the processor converts the digital audio/video data of the plurality of sets of the broadcast data service data into real time audio/video data.

As noted above with respect to Claim 1, it is respectfully submitted that the domination of Klosterman, Marshall, and Arazi do not teach or suggest "a processor" and "a memory" as defined in Claim 1.

With regard to Tokunaga, Tokunaga again relates to a different field of technology and concerns transmission of image data over a network, rather than a broadcast

environment. It provides a disclosure of selecting a compression method on the basis of traffic on the network.

Different compression methods are known to have different compression ratios and hence can be used to adjust bandwidth. However, we submit that in the field of the present invention as defined in Claims 1 and 31, there is no corresponding problem relating to variable traffic. As defined in the claims, the broadcast data service data is extracted from a broadcast carousel. Also, the television clips included in the digital audio/video data sets are intended for an end user as part of a broadcast system and it would not be obvious to consider providing different compression formats to be dealt with by the end user. In fact, it is respectfully submitted that one of ordinary skill in the art would consider providing different compression formats to make the receiver unnecessarily complicated. It is only with the realization that all of the plurality of sets of broadcast data service data can be periodically extracted and stored that allows the end user to have sufficient time to carry out the relatively complicated steps of processing different compression formats.

Consequently, it is respectfully submitted that one of ordinary skill in the art would not combine Tokunaga with Klosterman, as this would require a substantial redesign which would only appear to make the receiver unnecessarily complicated. Therefore, there can be no suggestion or motivation to make such a proposed combination. Further, it is respectfully submitted that Hölzle, Winston, Russo, Kostreski, Trovato, and Inoue do not cure the noted deficiencies of Klosterman, Marshall, Arazi, and Tokunaga. Thus, Claim 1 (and Claims 2-16, 24, 25, 27, and 32 dependent therefrom) is patentable over the cited references.

Accordingly, the outstanding rejections are traversed and the pending claims are believed to be in condition for formal allowance. An early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

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